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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,734	12/16/2003	Mitsushi Maeyama	ASAIN0128	3639

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EXAMINER
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KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/735,734

Applicant(s)

MAEYAMA ET AL.

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2 and 3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/123,140.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/16/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because the content of the abstract does not reflect the current claimed invention of Figures 5 and 6. Instead, the abstract includes subject matter and reference numbers from Figures 3 and 4, which was the claimed subject matter of parent application 10/123,140 (US 6,681,835). The abstract should be rewritten to incorporate the claimed subject matter representative of Figures 5 and 6. Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities: in the preliminary amendment, "now US Patent No. 6,681,835, " should be added after "2002," to update the status of the parent application 10/123,140. On page 1, last line, "mean" should be changed to "means". On page 6, line 10, "en" should be changed to "an". On page 7, lines 1 and 3, "(D)" and "(E)" should be changed to "(A)" and "(B)", respectively, for consistency with the steps set forth in claim 2. On page 7, line 13, "casing" should be changed to "casting". On page 9, line 21, "hosing" should be changed to "housing". On page 11, line 3, "pate" should be changed to "plate". On page 12, line 17, as well as page 16, line 10, "surely" should be deleted, and "casing" should be changed to "casting". Corrections and/or clarifications are required for these and other errors that occur throughout the specification.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 2, it is unclear what is meant by the term "the same". The term "the same" should be changed to either the "profile portion" or the "supercharger rotor", as it is unclear as to which of these two specific structures "the same" refers.

With regard to claim 2, it is unclear what is meant by "processing", as the helical portions are made by cutting or milling, and one of these terms should instead be used.

With regard to claim 2, it is unclear what is meant by "cross portion" on the surface, as "cross portion" could include helical areas that are raised or etched. In this instance, "cross portion" should probably be changed to "grooves" or "milled areas".

With regard to claim 3, it is unclear what is meant by "these grooves are "caused" to cross each other". Instead, the term "caused" should be replaced with a term relating to the cutting/milling process.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timuska et al. (US 4,761,124) in view of Miyashita (US 4,224,727).

Timuska et al. disclose a screw-type rotary machine (supercharger rotor) and method for making it, in which the method includes providing a casting mold 20 defining a profile portion of the rotor, placing a steel shaft 8 defined by a helical portion (helical edges/lands 10) within the mold 20 and affixed by central apertures (23,24) on the ends of the mold, and casting the profile portion through injection region 25 into the profile portion cavity (abstract; column 1, lines 6-12; column 2, lines 52-68; column 3, lines 1-49; and Figures 1 and 2). Timuska et al. do not disclose the use of both left and right helical portions on the shaft surface.

However, Miyashita discloses a method of making a body of a hydraulic master cylinder that includes a helical shaft 1 with left and right handed screw helical grooves

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created between ridges 1a that cross each other (embodiment of Figure 6), followed by die casting of molten metal to form a cast outer body section 2 onto the outer periphery of the shaft portion of inner body portion 1 that has the left and right handed screw helical grooves created between ridges 1a, for the purpose of increasing the casting surface area, thus obtaining stronger fusion bonding of the cast metal to the cylindrical interface of the cross-helical shaft, resulting in a strongly bonded integral cast structure (abstract; column 1, lines 48-58; column 3, lines 3-60; column 4, lines 20-65; and Figures 1-6).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the method of casting a supercharger rotor, as disclosed by Timuska et al., by adding the helical shaft with left and right handed screw helical grooves that cross each other, as taught by Miyashita, in order to increase the casting surface area, thus obtaining stronger fusion bonding of the cast metal to the cylindrical interface of the cross-helical shaft, resulting in a strongly bonded integral cast structure (Miyashita; abstract; column 1, lines 48-58; column 3, lines 34-56; and column 4, lines 34-65).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,023,613 and US 6,681,835 (which issued from parent application 10/123,140) are also cited.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 7/15/04*  
Examiner  
Art Unit 1725

KPK  
kpk  
July 15, 2004